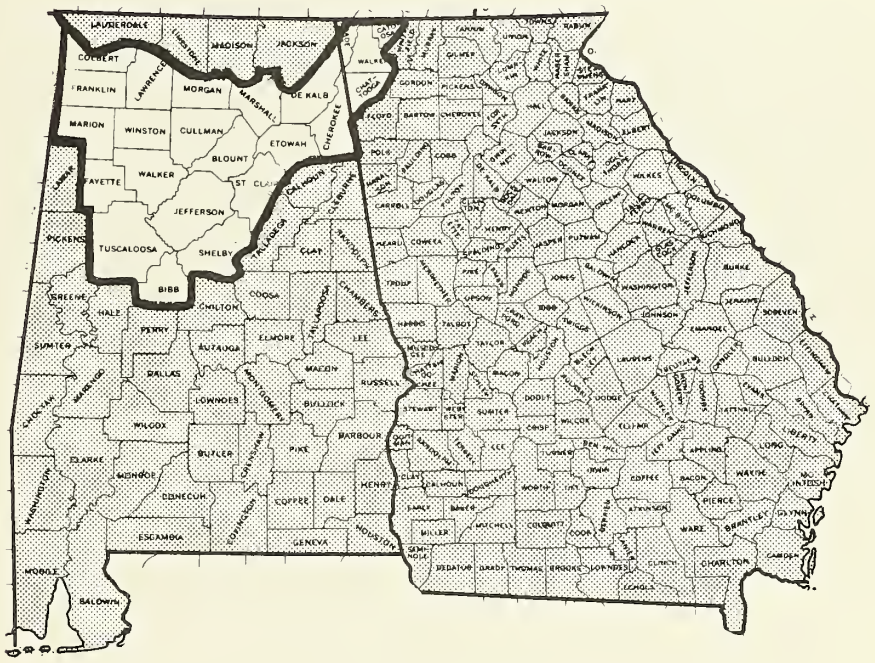
SOIL SURVEY INTERPRETATIONS FOR WOODLANDS

IN THE

SAND MOUNTAIN AREA

OF

ALABAMA AND GEORGIA



PROGRESS REPORT W-10 - - - MAY 1969

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Fort Worth, Texas

USDA-SCS-FORT WORTH, TEX. 1969
4-28021 5-69

This report contains interpretations of soil surveys for woodland use and management in the Sand Mountain area of Alabama and Georgia. The purpose is to provide currently available knowledge about soils as they relate to the establishment, growth, management, and harvesting of wood crops for the use of foresters, agricultural workers, woodland owners, and woodland managers. The information will be used by the Soil Conservation Service and cooperating agencies in the development of technical guides, soil handbooks and published soil survey reports.

Field information was gathered by teams of foresters and soil scientists. Representatives of Federal and State agencies, the wood-using industry, and others cooperated in gathering field data. The interpretations presented herein are made for use with soil surveys.

Table 2, SOIL RATINGS FOR WOODLAND USE, includes some evaluations for individual soils. The soil series listed are those defined according to the current soil classification system and includes portions of soil associations mapped in low intensity surveys. In column one (1) erosion and texture phases were consolidated within a soil series where no differences in productivity, species suitability or management problems existed.

Column two (2) includes a list of some of the commercially important tree species which are adapted to the soil in column one. These are the tree species which woodland managers generally favor in intermediate or improvement cuttings, after considering the form and vigor of individual trees. Priority between species will be influenced by local marketability and the owner's objectives, as well as the quality of wood products from a given species.

Column three (3) indicates the average site index for the most important species listed in column two. The standard deviation is shown as a plus or minus figure (±) for each species where five or more plots were taken on the

mapping units listed in column one. The site index curves used for each tree species are shown in Table 1, GUIDE FOR WOODLAND SUITABILITY CLASSES. An asterisk (*) following the site index rating indicates the rating is an estimate based on the same species on a similar soil, or by comparison with another species on the same soil. Site index is the average height of dominant trees at age 30 for cottonwood, and age 50 for all other species.

Column four (4) indicates the range of site index of the most important tree species in column two. The range in site index values is dependent on soil physical conditions, aeration, and nutrient and moisture availability during the growing season.

Column five (5) evaluates the potential erosion hazard of the soil in woodland use following cutting operations, or where the soil is exposed along roads, trails, firebreaks, or log-yarding areas. A rating of slight indicates that problems of erosion control are unimportant. A rating of moderate indicates some attention must be given to prevent unnecessary soil erosion. A rating of severe indicates that intensive treatments, or special equipment and methods of operation should be planned to minimize soil erosion. The potential erosion hazard is based on slope, soil depth and erodibility, and soil loss tolerance.

Column six (6) includes evaluation of equipment restrictions. Ratings reflect limitations in the use of equipment for managing or harvesting the tree crop. A rating of slight indicates equipment use is seldom limited in kind or time of year. A rating of moderate indicates a need for modified equipment or seasonal restrictions due to slope, stones, obstructions, soil wetness, flooding, or overflows. A rating of severe indicates the need for specialized equipment due to one or more of the factors listed above.

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Column seven (7) indicates the degree of expected seedling mortality during the first two growing seasons after planting or seeding. Normal rainfall, adequate site preparation, good planting stock, proper planting methods, and appropriate protection and cultivation are assumed. A rating of slight indicates that unsatisfactory survival on less than 25 percent of the area is likely. A rating of moderate indicates that unsatisfactory survival is likely on 25 to 50 percent of the area planted. A rating of severe indicates that unsatisfactory survival is likely on more than 50 percent of the area.

It will be noted that aspect on slopes greater than 20 percent are ordinated as being "north and east" or "south and west" slopes. Column seven implies that seedling mortality is greater on south and west slopes than on north and east slopes. Also, south and west slopes are generally not suitable for the better broadleaf species.

Column eight (8) lists several suitable tree species for planting on the soil named in column one. The list may include some species which do not normally occur in native stands on the designated soil or in this physiographic area, as well as some of the important species listed in column two.

Column nine (9) shows the ordination of the soils into a woodland suitability group. A woodland suitability group is made up of kinds of soil that are capable of producing similar kinds of wood crops, that need similar management to produce these crops, and that have about the same potential productivity. The ordination system and the suitability group symbols are explained in the following paragraphs.

The first element of the group symbol indicates the woodland suitability

class. It expresses site quality by an arabic numeral ranging from 1 to 5, with class 1 the highest in potential productivity, followed by class 2, 3, 4, and 5. It is based on the average site index of one or more indicator forest types or tree species, as shown in Table 1, GUIDE FOR WOODLAND SUITABILITY CLASSES. The indicator species are underscored in column two of Table 2.

The second element in the symbol indicates the suitability subclass. It expresses selected soil properties that cause moderate to severe hazards or limitations in woodland use or management, by one of the following lower case arabic letters:

Subclass x (stoniness or rockiness). Soils having restrictions or limitations for woodland use or management due to stones or rocks.

Subclass w (excessive wetness). Soils in which excessive water, either seasonally or yearlong, causes significant limitations for woodland use or management. These soils have restricted drainage, high water tables, or overflow hazards which adversely affect either stand development or management.

Subclass d (restricted rooting depth). Soils with restrictions or limitations for woodland use or management due to restricted rooting depths. Soils shallow to hard rock, hardpan, or other layers in the soil that restrict roots are examples.

Subclass c (clayey soils). Soils having restrictions or limitations for woodland use or management due to the kind or amount of clay in the upper portion of the soil profile.

Subclass s (sandy soils). Sandy soils with little or no textural B horizons and having moderate to severe restrictions or limitations for

woodland use or management. These soils impose equipment limitations, have low moisture-holding capacity, and normally are low in available plant nutrients.

Subclass f (fragmental or skeletal soils). Soils with restrictions or limitations for woodland use or management due to large amounts of coarse fragments in the profile over 2 mm and less than 10 inches, but includes flaggy soils.

Subclass r (relief). Soils with restrictions or limitations for woodland use or management due primarily to steepness of slope, aspect, or position on the slope.

Subclass o (slight or no limitations). Soils with no significant restrictions or limitations for woodland use or management.

Some kinds of soil may have more than one set of subclass characteristics. Priority in placing each kind of soil into a subclass is in the order that the subclass characteristics are listed above.

The third element in the symbol indicates the degree of hazards or limitations, and the general suitability of the soils for certain kinds of trees. The three management problems considered here are: (1) erosion hazard, (2) equipment restrictions, and (3) seedling mortality.

The numeral 1 indicates soils with no to slight management problems, and they are best suited for needleleaf trees.

The numeral 2 indicates soils with one or more moderate management problems, and they are best suited for needleleaf trees.

The numeral 3 indicates soils with one or more severe management problems, and they are best suited for needleleaf trees.

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The numeral 4 indicates soils with no to slight management problems, and they are best suited for broadleaf trees.

The numeral 5 indicates soils with one or more moderate management problems, and they are best suited for broadleaf trees.

The numeral 6 indicates soils with one or more severe management problems, and they are best suited for broadleaf trees.

The numeral 7 indicates soils with no to slight management problems, and they are suitable for either needleleaf or broadleaf trees.

The numeral 8 indicates soils with one or more moderate management problems, and they are suitable for either needleleaf or broadleaf trees.

The numeral 9 indicates soils with one or more severe management problems, and they are suitable for either needleleaf or broadleaf trees.

A fourth element, the letter e, has been used to ordinate severely eroded soils into a subgroup requiring special treatment because of present sheet and gully erosion.

TABLE 1 - GUIDE FOR WOODLAND SUITABILITY CLASSES
SAND MOUNTAIN AREA

Indicator Forest Type or Species		1 Very High	2 High	3 Moderately High	4 Moderate	5 Low
		Site Index				
Cottonwood	(1)	106+	96-105	86-95	76-85	75-
Yellow-poplar	(2)	106+	96-105	86-95	76-85	75-
Sweetgum	(3)	96+	86-95	76-85	66-75	65-
Water oaks	(4)	96+	86-95	76-85	66-75	65-
Loblolly pine	(5)	96+	86-95	76-85	66-75	65-
Shortleaf pine	(6)	86+	76-85	66-75	56-65	55-
Sou. red oak	(7)	86-+	76-85	66-75	56-65	55-
Eastern redcedar	(8)	66+	56-65	46-55	35-45	35-

(1) Broadfoot, W. M., 1960, Field Guide for Evaluating Cottonwood Sites, USFS Occ. Paper 178 (Fig. 4).
(2) Doolittle, W. T., 1957, Site Index Curves for Yellow-poplar-So. Appalachians.
(3) Broadfoot, W. M., 1959, Guide for Evaluating Sweetgum Sites, USFS Occ. Paper 176 (Fig. 4).
(4) Broadfoot, W. M., 1963, Guide for Evaluating Water Oak Sites in the Mid-South, USFS Res. Paper SO-1 (Fig. 4).
(5) Coile, T. S. and F. X. Schumacher, Jour. For. 54:432-435 (Fig. 4).
(6) Coile, T. S. and F. X. Schumacher, Jour. For. 54:432-435 (Fig. 8).
(7) Olson, D. G., 1959, Site Curves for Upland Oakes in the Southern Appalachians, SE For. Expmt. Sta. Res. Note 125.
(8) TVA 1948, Site Curves, E. Redcedar, Tennessee Valley.

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SOIL CONSERVATION SERVICE

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		Woodland Suitability Group
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Albertville fine sandy loam to loam, 0-15% slopes.	Loblolly pine Shortleaf pine Virginia pine	80±4 71±4 70*	71-84 66-76 59-82	Slight	Slight	Slight	Loblolly pine Virginia pine	3o1
silty clay loam to clay loam, 6-15% slopes, eroded.	Loblolly pine Shortleaf pine Virginia pine	74±9 68±2 64	65-82 65-74 50-74	Moderate	Moderate	Moderate	Loblolly pine Virginia pine	4c2
Allen fine sandy loam to clay loam, 0-25% slopes.	Loblolly pine Shortleaf pine Virginia pine Yellow-poplar Upland oaks	72±6 71±10 73±6 87 71	66-79 55-68 67-79 85-97 67-75	Slight	Slight	Slight	Yellow-poplar Loblolly pine Virginia pine Black walnut	3o7
stony loam, 15-45% slopes				Moderate	Moderate	Slight		3x8
Armuchee very fine sandy loam to loam, 2-15% slopes	Loblolly pine Shortleaf pine	66 56	60-70 50-60	Moderate	Slight	Moderate	Loblolly pine Virginia pine	4d2
Atkins fine sandy loam to silty clay loam, 0-2% slopes	Loblolly pine Shortleaf pine Sweetgum Yellow-poplar Red oaks	86±5 82 94 96 80*	80-91 77-87 90-100 90-100 75-85	Slight	Severe	Moderate	Loblolly pine Yellow-poplar Sweetgum	2w9
Barbourville silty loam and fine sandy loam, 0-12% slopes.	Yellow-poplar Upland oak Loblolly pine Shortleaf pine Black walnut	107±3 80 90 80 -	100-110 76-85 86-95 75-85 -	Slight	Slight	Slight	Yellow-poplar Loblolly pine Black walnut	2o7
Bruno loamy fine sand, 0-2% slopes.	Shortleaf pine Virginia pine Loblolly pine Sycamore	70 70 80 -	66-75 66-75 76-85 -	Slight	Moderate	Severe	Loblolly pine Virginia pine Sycamore	3s9
Colbert silt loam to silty clay loam, 2-15% slopes.	Loblolly pine Virginia pine Shortleaf pine Eastern redcedar	66±4 60 60 47	60-69 56-65 56-65 40-50	Slight	Moderate	Moderate	Loblolly pine Eastern redcedar	4c2
Crossville loam, 2-12% slopes	Shortleaf pine Virginia pine Loblolly pine	60 61±10 70	56-65 52-74 65-75	Slight	Slight	Slight	Loblolly pine Virginia pine	4o1
Enders fine sandy loam to loam, 2-25% slopes.	Loblolly pine Shortleaf pine Virginia pine	74 58±8 65	68-80 50-68 -	Slight	Slight	Slight	Loblolly pine	4o1
clay loam to clay 6-25% slopes, eroded.	Loblolly pine Virginia pine Eastern redcedar	65* 58 40*	60-68 52-62 36-45	Moderate	Moderate	Moderate	Loblolly pine Virginia pine Eastern redcedar	5c2

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Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		Woodland Suitability Group
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Hanceville loam, 2-10% slopes.	Loblolly pine Shortleaf pine Virginia pine	73 65 70	66-78 60-70 65-75	Slight	Slight	Slight	Loblolly pine Virginia pine	4o1
Hartsells sandy clay loam 2-25% slopes.	Loblolly pine Shortleaf pine Virginia pine	72±7 61±6 72±8	61-80 55-67 60-80	Slight	Slight	Slight	Loblolly pine Virginia pine Shortleaf pine	4o1
Hector fine sandy loam to loam, 10-25% slopes.	Loblolly pine Shortleaf pine Virginia pine Yellow-poplar Upland oaks	73±6 63±7 61±9 91±7 61±9	66-80 55-71 50-70 80-100 50-70	Moderate	Slight	Moderate	Loblolly pine Virginia pine	4d2
25-45% slopes				Moderate	Moderate	Moderate		
stony loam, 10-60% slopes.				Moderate to Severe	Moderate to Severe	Moderate		4x3
Holston fine sandy loam to silt loam, 2-25% slopes.	Loblolly pine Red oaks Yellow-poplar Shortleaf pine Virginia pine	85 78±6 86±3 69±7 73	80-90 70-85 80-94 60-80 70-80	Slight	Slight	Slight	Loblolly pine Virginia pine Yellow-poplar Black walnut	3o7
Jefferson fine sandy loam to loam, 2-25% slopes	Loblolly pine Shortleaf pine Virginia pine Yellow-poplar Red oaks	77±5 66±10 70±10 101±8 -	70-85 55-75 60-80 90-110 -	Slight	Slight	Slight	Loblolly pine Virginia pine Yellow-poplar	3o7
stony fine sandy loam, 6-45% slopes.				Slight to Moderate	Moderate to Severe	Slight		3x8
Leadvale silty loam to loam, 0-6% slopes.	Loblolly pine Shortleaf pine Yellow-poplar Upland oaks	77±5 66 100 64±9	70-85 60-70 95-105 60-70	Slight	Slight	Slight	Loblolly pine Yellow-poplar	3o7
Lee silt loam and cherty silt loam, 0-6% slopes.	Yellow-poplar Sweetgum Red oaks White oaks Loblolly pine	100 90 - - 90	95-105 85-95 - - 85-95	Slight	Severe	Severe	Loblolly pine Sweetgum	2w9
Linker fine sandy loam to sandy clay loam, 2-25% slopes.	Loblolly pine Shortleaf pine Virginia pine	67±6 65±7 70±7	60-74 58-73 62-76	Slight	Slight	Slight	Loblolly pine Virginia pine	4o1
Locust fine sandy loam to loam, 0-6% slopes.	Loblolly pine Yellow-poplar Red oaks White oaks Shortleaf pine	75* 85* 70* 65* 65*	70-80 80-90 65-75 60-70 60-70	Slight	Slight	Slight	Loblolly pine Yellow-poplar	3o7

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Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		Woodland Suitability Group
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Montevallo lower slopes, shaly silt loam 2-25% slopes.	Loblolly pine Virginia pine Shortleaf pine Yellow-poplar	66 61 62 90	61-71 61-71 56-65 85-95	Slight to Moderate	Slight	Moderate	Loblolly pine Virginia pine	4d2
25-60% slopes.				Severe	Moderate to Severe	Moderate		4d3
upper slopes 2-25% slopes.	Shortleaf pine Virginia pine Loblolly pine	54 55 58	50-60 50-60 55-65	Slight to Moderate	Slight	Moderate to Severe	Loblolly pine Virginia pine	5d3
25-60% slopes.				Severe	Moderate to Severe	Moderate to Severe		
Mountainburg fine sandy loam to loam, 2-15% slopes.	Loblolly pine Shortleaf pine Virginia pine	70±5 61 62±5	65-75 55-65 58-67	Slight	Slight	Moderate	Loblolly pine Virginia pine	4d2
stony fine sandy loam, 15-45% slopes				Moderate to Severe	Moderate	Moderate		4x3
Muse silt loam, gravelly silt loam, shaly silt loam, 2-15% slopes	Yellow-poplar Loblolly pine Shortleaf pine Virginia pine Red oaks	90 76 59 62±3 70	85-95 70-80 54-64 59-65 66-75	Slight	Slight	Slight	Loblolly pine Virginia pine Yellow-poplar	3o7
Paraloma cherty fine sandy loam, 2-25% slopes	Loblolly pine Shortleaf pine Virginia pine	75 65- -	70-80 60-70 -	Slight	Slight	Moderate	Loblolly pine Virginia pine	4f2
Philo fine sandy loam to loam, 0-2% slopes	Loblolly pine Shortleaf pine Yellow-poplar Sweetgum Cottonwood	84±6 80 100 90* 110*	76-90 76-85 95-105 85-90 -	Slight	Moderate	Slight	Yellow-poplar Loblolly pine Cottonwood	2w8
Pope silt loam to fine sandy loam, 0-2% slopes.	Loblolly pine Shortleaf pine Virginia pine Yellow-poplar	83 68±8 74±5 103	80-90 65-75 70-80 96-105	Slight	Slight	Slight	Yellow-poplar Loblolly pine	2o7
Purdy silt loam, fine sandy loam, 0-2% slopes.	Loblolly pine Shortleaf pine Yellow-poplar Bottomland oaks Sweetgum	82 78 89 90 90	80-87 75-85 85-95 85-95 85-95	Slight	Severe	Moderate to Severe	Loblolly pine Yellow-poplar Sweetgum	2w9
Ramsey silt loam, 2-25% slopes.	Loblolly pine Shortleaf pine Virginia pine Yellow-poplar	75 73±5 61 96±14	70-80 68-78 56-66 80-100	Slight	Slight	Moderate	Loblolly pine Virginia pine	4d2
25-60% slopes.				Moderate to Severe	Moderate to Severe	Moderate		4d3

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Soils	Potential Productivity			Management Problems			Species Suitable for Planting	Ordination
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		Woodland Suitability Group
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Sequatchie silt loam to loam, 0-6% slopes	Loblolly pine Shortleaf pine Yellow-poplar Red oaks	86 75* 100 80*	81-91 - 91-105 75-85	Slight	Slight	Slight	Loblolly pine Virginia pine Yellow-poplar	2o7
Stendall silt loam to loam, 0-2% slopes	Loblolly pine Yellow-poplar Sweetgum Shortleaf pine Red oaks	86 99 90 74 75	80-90 94-105 85-96 - -	Slight	Severe	Severe	Loblolly pine Sweetgum Sycamore	2w9
Taft fine sandy loam to loam, 0-2% slopes.	Loblolly pine Shortleaf pine Sweetgum Oaks Yellow-poplar	79 70 90 70 95	74-85 65-75 85-96 66-75 90-104	Slight	Moderate	Moderate	Loblolly pine Yellow-poplar Sweetgum Sycamore	3w8
Tilsit fine sandy loam to loam, 0-6% slopes.	Loblolly pine Shortleaf pine Yellow-poplar Red oak	76 70- 90 70±12	70-82 65-76 85-95 56-84	Slight	Slight	Slight	Loblolly pine Yellow-poplar Virginia pine	3o7
Toccoa fine sandy loam to loam, 0-2% slopes.	Loblolly pine Yellow-poplar Red oaks White oaks Sweetgum	95 100 85 - 90	90-100 95-105 80-90 - 85-96	Slight	Slight	Slight	Loblolly pine Yellow-poplar Sweetgum	2o7
Townley silty loam to clay loam, 2-15% slopes.	Loblolly pine Shortleaf pine Virginia pine	75±5 59±5 70±6	68-90 50-65 62-77	Slight	Slight	Slight	Loblolly pine Virginia pine	4o1

Table 3, SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY, is a summary of the most important interpretations for a woodland suitability group of soils.

Column one (1) includes the suitability group symbol and brief description of the group of soils, including their important hazards and limitations for woodland use and management.

Column two (2) is a tabulation of the soils within each woodland suitability group.

Column three (3) is a list of some commercially-important tree species which occur on the soils in each suitability group.

Column four (4) shows the site class (site index rounded off to the nearest 10-foot interval) for the most important tree species listed in column three.

Column five (5) lists some of the most important tree species which are suitable for planting or direct seeding on the soils in each suitability group.

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TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitable for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
2o7 Loamy soils with high potential productivity; no serious soil-related management problems; suited for both southern pines and hardwoods.	Barbourville silt loam to fine sandy loam, 0-12% slopes. Pope silt loam to fine sandy loam, 0-2% slopes. Sequatchie silt loam to loam, 0-6% slopes. Toccoa fine sandy loam to loam, 0-2% slopes.	Cottonwood Yellow-poplar Sweetgum Loblolly pine Shortleaf pine Virginia pine Bottomland oak	110 100 90 80 70 70 80	Cottonwood Yellow-poplar Sweetgum Loblolly pine Black walnut
2w8 Seasonally wet soils with high productivity; moderate equipment restrictions; suitable for pine or hardwood.	Philo fine sandy loam to loam, 0-2% slopes.	Cottonwood Yellow-poplar Sweetgum Loblolly pine Shortleaf pine Virginia pine Bottomland oak	110 100 90 80 70 70 80	Cottonwood Yellow-poplar Loblolly pine
2w9 Excessively wet soils with high productivity; severe equipment limitations and seedling mortality; suitable for southern hardwoods and pines.	Atkins fine sandy loam to silty clay loam, 0-2% slopes. Lee silt loam to cherty silt loam, 0-6% slopes. Purdy silt loam to fine sandy loam, 0-2% slopes. Stendall silt loam to fine sandy loam, 0-2% slopes.	Loblolly pine Shortleaf pine Bottomland oak Yellow-poplar Sweetgum	90 80 80 100 90	Loblolly pine Sycamore Sweetgum Yellow-poplar
3o1 Loamy upland soils with moderately high productivity; no serious soil-related management problems; best suited for southern pines.	Albertville fine sandy loam to loam, 0-15% slopes.	Loblolly pine Shortlead pine Virginia pine	80 70 70	Loblolly pine Virginia pine
3o7 Loamy soils with moderately high productivity; no serious soil-related management problems; suitable for southern pines, redcedar, and hardwoods.	Allen fine sandy loam to loam 0-25% slopes. Holston fine sandy loam to silt loam, 2-25% slopes. Jefferson fine sandy loam to loam, 2-25% slopes. Leadvale silt loam to loam, 0-6% slopes. Locust fine sandy loam to loam, 0-6% slopes. Muse silt loam, 2-15% slopes. Tilsit fine sandy loam to loam, 0-6% slopes.	Loblolly pine Shortleaf pine Virginia pine Yellow-poplar Upland oak Eastern redcedar	80 70 70 90 70 50	Yellow-poplar Loblolly pine Virginia pine Black walnut Eastern redcedar
3w8 Seasonally wet soil with moderately high productivity; moderate equipment limitations; moderate seedling mortality; suited for southern pines and hardwoods.	Taft fine sandy loam to loam, 0-2% slopes.	Loblolly pone Shortleaf pine Sweetgum Upland oak Yellow-poplar	80 70 90 70 90	Yellow-poplar Loblolly pine Sweetgum Sycamore
3x8 Stony soils with moderately high productivity; moderate erosion hazard, moderate equipment limitation; suited for southern pines or hardwoods.	Allen stony loam 15-45% slopes Jefferson stony fine sandy loam, 6-45% slopes.	Loblolly pine Shortleaf pine Virginia pine Yellow-poplar Upland oak	70 70 70 90 70	Loblolly pine Virginia pine Yellow-poplar (in draws)

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitable for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
3s9 Sandy soils with moderately high productivity; moderate to severe equipment limitations and seedling mortality; suitable for southern hardwoods or pines.	Bruno loamy fine sand, 0-2% slopes.	Shortleaf pine Virginia pine Sycamore Loblolly pine	70 70 - 80	Loblolly pine Sycamore
4o1 Loamy upland soils that are moderately productive; no serious soil-related management problems; best suited for southern pine.	Crossville loam, 2-12% slopes. Enders fine sandy loam to loam, 2-25% slopes. Hanceville loam, 2-10% slopes Hartsells sandy clay loam, 2-25% slopes. Linker fine sandy loam to sandy clay loam, 2-25% slopes Townley silt loam to clay loam, 2-15% slopes.	Loblolly pine Shortleaf pine Virginia pine Yellow-poplar	70 60 70 90	Loblolly pine Virginia pine
4c2 Clayey upland soils that are moderately productive; moderate erosion hazard, equipment limitations; and seedling mortality; best suited for southern pine and Eastern redcedar.	Albertville silty clay to silty clay loam, 6-15% slopes Colbert silt loam to silty clay loam, 2-15% slopes.	Loblolly pine Shortleaf pine Virginia pine Eastern redcedar	70 60 60 40	Loblolly pine Virginia pine Eastern redcedar
4d2 Upland loamy soils that are shallow to rock; moderately productive; moderate erosion hazard, equipment limitations and seedling mortality; best suited for southern pines.	Armuchee very fine sandy loam to loam, 2-15% slopes. Hector fine sandy loam to loam, 10-25% slopes. Montevallo shaly silt loam, 2-25% slopes (Lower slopes) Mountainburg fine sandy loam to loam, 2-15% slopes. Ramsey silt loam, 2-25% slopes.	Loblolly pine Virginia pine Shortleaf pine Yellow-poplar Upland oak	70 60 60 90 60	Loblolly pine Virginia pine
4d3 Upland loamy soils that are shallow to rock and steep; moderately productive; moderate seedling mortality; severe equipment limitations and erosion hazard; best suited to southern pine.	Hector fine sandy loam to loam, 25-45% slopes. Montevallo shaly silt loam, 25-60% slopes (lower slopes). Ramsey, silt loam, 25-60% slopes.	Loblolly pine Shortleaf pine Virginia pine Yellow-poplar Upland oak	70 60 60 90 60	Loblolly pine Virginia pine
4f2 Upland cherty soils that are moderately productive; moderate seedling mortality; best suited to southern pines.	Paraloma cherty fine sandy loam, 2-25% slopes.	Loblolly pine Shortleaf pine Virginia pine Yellow-poplar	70 60 60 90	Loblolly pine Virginia pine
4x3 Rocky or stony soils with moderate productivity; moderate to severe erosion hazard, equipment limitations, and seedling mortality; best suited for southern pines.	Hector stony loam, 10-60% slopes. Mountainburg stony fine sandy loam, 15-45% slopes.	Loblolly pine Virginia pine Shortleaf pine Upland oaks	70 60 60 60	Loblolly pine Virginia pine

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitable for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
5c2 Clayey soils with low productivity; moderate erosion hazard, equipment limitations, and seedling mortality; best suited for southern pines and eastern redcedar.	Enders clay loam to loam, 6-25% sloped, eroded.	Loblolly pine Shortleaf pine Eastern redcedar Virginia pine	60 50 40 50	Loblolly pine Virginia pine Eastern redcedar
5d3 Shallow soils with low productivity; moderate to severe seedling mortality; best suited for southern pines.	Montevallo shaly silt loam to loam, 2-60% slopes (Upper slopes)	Loblolly pine Shortleaf pine Virginia pine	60 50 50	Loblolly pine Virginia pine